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ABSTRACT

An analysis of stress patterns in Old English poetry addresses conflicting theories of and lack of uniformity in scansion and proposes that this problem is due primarily to scansion of a given half-line by somewhat arbitrary assignment to one of five types, with no rule-governed word stress principles upon which to base its scansion. It is recommended that for correct and uniform scansion of a given half-line, word stress rules be determined first and then applied to the words constituting the half-line, and finally, the resulting linguistic stress pattern should be matched to a verse type. The analysis provides (1) traditional accounts from handbooks of word stress patterns, based on metrical evidence, and (2) the corresponding grid-based analysis of Old English stress rules. (MSE)

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Stress Assignment Rules for Old English (Poetry)*

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A line of an Old English poem consists of two verses (i.e. half-lines), united by alliteration. A verse in turn consists of two feet, and a foot in turn consists of a 'long' syllable bearing primary stress and a varying number of syllables bearing weak stress, with or without a secondary stress on another 'long' syllable.

A metrical strong stress, whether primary (/), called the 'lift', 'ictus', or 'arsis', or secondary (\), occurs on a two-mora unit, i.e. a heavy syllable, or a sequence of two 'light' syllables, of which the first is necessarily short and the second is usually short but may be long; on the other hand, weak stress, called the 'thesis', may occur on a long or short syllable. A strong stress over a sequence of two 'light' syllables, of which the first is the root-initial syllable, is called a resolved stress, indicated either as $\hat{\cup}x$ or simply as $\wedge$ for the resolved primary stress and $\hat{\cup}x$ or simply $\backslash$ for the resolved secondary stress, as in (1 - 2), where (a) exhibits the linguistic stress pattern of a verse and (b) its metrical stress pattern, with the slash mark (/) representing foot division.

- (1) a. féorh gēnērēdē^x → b. féorh gēnērēdē^x
(Brunnanburh 36), an A-type verse

- (2) a. cāldūm cýlēgicēlūm^x → b. cāldūm / cýlēgicēlūm^x
(Phoenix 59), a D₁-type verse

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However, a strong stress may occur on a short syllable alone, indicated as $\cup$ or $\backslash$, when it is immediately preceded by a long stressed syllable (primary or secondary) in the preceding word in a compound (3b) or a

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phrase (3a,c,d).

- (3) a. $\acute{o}f\acute{e}r\acute{d}\acute{e}op / w\acute{a}t\acute{e}r$ (Genesis 2875), a C-type verse
 b. $\acute{i}n\acute{g}\acute{e}ar\acute{d}\acute{a}g\acute{u}m$ (Wanderer 44), a C-type verse
 c. $w\acute{i}t / \acute{e}ft\acute{c}\acute{u}m\acute{a}\acute{e}$ (Genesis 2881), a D₁-type verse
 d. $\acute{m}\acute{o}e\acute{l}ing / m\acute{a}nig$ (Beowulf 1112), an A-type verse

Of the lexical words, nouns and adjectives nearly always bear a metrical strong stress, and verbs and adverbs may or may not, while function words are seldom stressed except on metrical demands.

Traditionally, an OE verse has been scanned so as to be fitted into one of Sievers' five basic verse types (4), some with a number of variants, of which type B (iambic) is the mirror image of type A (trochaic), and type C is a combination of types A and B, i.e. trocho-iambic, and type E is the mirror image of type D.

- (4) A: $'x / 'x$ (stíðum wordum) (Genesis 2848)
 $'\backslash / 'x$ (glæd-mōð gyrneð) (Phoenix 462)
 $'x / '\backslash$ (bord and brād swurd) (Maldon 15)
 $'\backslash / '\backslash$ (guð-rinc gold-wlanc) (Beowulf 1881)
 B: $x / / x$ (þīn āgen bearn) (Genesis 2851)
 C: $x / / 'x$ (on flot fēran) (Maldon 41)
 $x / / '\backslash$ (ond eall ondweard)
 D₁: $' / / '\backslash x$ (eald inwitta) (Brunnanburh 46)
 $'x / / '\backslash x$ (grētað glīw-stafum) (Wanderer 52)
 D₂: $' / / 'x \backslash$ (flet innanweard) (Brunnanburh 1977)
 $'x / / 'x \backslash$ (wērig wīges sād) (ibid. 20)
 E₁: $'\backslash x / /$ (andlangne dæg) (ibid. 21)
 $'x \backslash x / /$ (ffīfelcynnes eard) (ibid. 104)
 E₂: $'x \backslash / /$ (morðor-bed strēd) (ibid. 2437)

It is to be noted from (4) that of the verse types that contain a foot beginning with a stressed syllable (A, C, D, E), secondary stress is obligatory for the types D and E but optional for the types A and C in lieu of weak stress.

The verse (= metrical) stress pattern of a half-line may or may not agree with its prose (= linguistic) stress pattern, in both Old and Middle English. However, there is one major difference between ME poetry and OE poetry. In Middle English, a poem, long or short, would exhibit the same underlying verse pattern throughout, as for "The Prologue to the Canterbury Tales", whose underlying verse meter is uniformly iambic pentameter; therefore, it is easy to discover the divergencies between the prose stress pattern and its verse stress pattern of a line from an ME poem. However, it is not so in Old English, where a poem, long or short, may accomodate all five different metric patterns (i.e. types); therefore, some verse line can be scanned ambiguously as of more than one type, giving rise to a great controversy in scansion. The conflicting 'theories' of, and the lack of uniformity, in scansion, I believe, are due to scansion of a given half-line by fitting it somewhat arbitrarily into one of the five types (4), with no rule-governed word stress principles upon which to base its scansion. Therefore, one should first determine word stress rules and then apply these rules to the words that constitute a given half-line, and finally match the resulting linguistic stress pattern of a half-line so arrived at against the Sievers' five verse types to determine the correct verse type for it. In this way, one can correctly, hence uniformly, scan a given half-line.

The present paper will therefore consists of two parts: in Part I are given traditional accounts from handbooks of word stress patterns (based on metrical evidence), and in Part II their grid-based analysis of Old English

stress rules.

I

The main sources of information on OE word stress described in this paper are Campbell (1959), supplemented by Huguenin (1901) for secondary stress and Pogatscher (1888) for loan words.

1.1. Stress patterns for native words (Campbell §§ 71-92)

According to traditional accounts of Old English stress patterns, primary stress falls on the root initial syllable of simple words (5) and also of the first member of a 'phonological' compound word (6) and secondary stress on the second member of a phonological compound word (6) and also on the heavy (9ai) or light (9aii) medial syllable of a multisyllabic word after two moras--a heavy syllable (9a) or a sequence of two light syllables (9b); consequently, secondary stress is not available on the final heavy syllable of a simple word (7), except on metrical demands (11)(also (81))(Campbell §91 fn.1; Cable p.61),¹ since the secondary stress of "second elements which did not retain their original semantic force fully...tends to be reduced"(7a), nor on a heavy medial (8a) or light medial (8b) syllable after a stressed light syllable except when preceded by a phonological word of a stressed heavy syllable in compounds or phrases (10).² On the other hand, the 'half-stress' that fell on a 'light' medial 'derivative' syllable (exp. -od-)(12a) or on a heavy medial syllable (12b) can be neglected on metrical demands in verse (Campbell, *ibid.*).

(5) (mono- or disyllabic) simple words

wórd 'word', stān-as 'stones', léoht-e 'to the light', léorn-ere
'learner'

(6) 'phonological' compounds

a. words with stressed prefixes (see §2.2.3 below): ún-nýtt 'useless',

- án-sund 'sound' (Phoenix 20), ánd-giet 'sense', ánd-wýrde 'answer'
- b. normal compound words: síp-fæt 'journey', góld-wlanc 'proud with gold', hlāf-wéard 'loaf-keeper, lord'
- (7) disyllabic words with closed final syllable
- a. hlāford 'lord' (< hlāf-wéard)(6b), fúlluht 'baptism'(< fúl-wiht), fúltum 'help'(< fúll-tēam)(see (84))
- b. Bēowulf, Hrōþgār, Hēngest; æþeling 'prince', cýning 'king'
- c. inwit 'evil', ōþer 'other'
- (8) trisyllabic words with light initial syllable
- a. cýninges (gen.sg. of cýning 'king')(Beowulf 3093), wésende (pres. ppl. of wesan 'to be')
- b. wúnode 'past sg. of wunian 'to dwell'', fároþe 'dat.sg. of faroþ 'shore'', (and)swárode (past sg. of (and)swarian 'to answer'), wérige 'accursed'
- (9) multisyllabic simple words, including the derived (i.e. suffixed) forms) of (7)
- a. with heavy initial syllable
- i. with secondary stress on a heavy medial syllable: Bēowulfes (gen.sg. of Bēowulf), hlāfordes, Hrōþgāres, Hēngestes; inwidda 'adversary'; síngende (pres.ppl. of singan 'to sing'), þúsende (dat.sg. of þúsend 'thousand')(Maldon 65); ōþerne (M.acc.sg. of ōþer), hāligne (< hālig 'holy')(Hymns 10.41a1), āgēne (< āgen 'own')(Phoenix 264)
- ii. with secondary stress on a light medial syllable: wísode (past sg. of wīsian 'to guide')(Maldon 141), séalfode (< sealfian 'to annoint'), éndode (< endian 'to end'); wōriað (3 pl. of wōrian 'to move')(Wanderer 78); hūntode (dat.sg. of hūntoþ 'hunting')(Campbell §89), wýnsume (< wynsum 'pleasant')(Be Manna Lease 41)

- b. with light initial syllable (with a resolved stress)(cf. (1-2)):
 ēbelinge (dat.sg. of ~~ē~~beling)(Beowulf 982), gēdelinges (gen.sg. of gēdeling 'kinsman'(ibid. 2617); lifiende (pres.ppl. of lifian 'to live'); (ge)fēterode (past sg. of ~~ge~~feterian 'to fether')(Genesis 2902), hāfenode (< hafenian 'to hold')(Maldon 309), stāðelode (< staðelian 'to fix')(Phoenix 130)

(10) in compounds or phrases with (8a) as a second member

- a. þēod-cýninges (gen.sg. of þēod-cýning 'monarch')(Beowulf 1039),
 cniht-wesende 'being (- as) a youth'(ibid. 372, 535)
 b. féorh cýninges 'life of the king' (ibid. 1210), fýll cýninges
 'death of the king' (ibid. 2912)

(11) (cf. 7))

- a. Hrúnting náma^x (Beowulf 1457), an A-type verse
ēbeling mánig^x (ibid. 1112, 343), an A-type verse
 b. Bēowulf gē-þah (ibid. 1024), an E₁-type verse

(12) a. éndode (9aii) → éndode

b. Bēowulfes (9ai) → Bēowulfes

1.2. Stress patterns for loan-words--mostly classical (Latin) or biblical (Campbell §548-558)

Loan-words followed the stress patterns of native words. Therefore, when the chief stress was not already on the root-initial syllable, it was then transferred to the initial syllable, with simultaneous lengthening of the syllable if originally short, as in māgister (13a) from Latin magister (see (24a)), and a 'strong half-stress' remained on the previous syllable which had borne the main stress in Latin, as in (13)(Campbell §548; Pogatscher §24).

(13)(= 9a)

- a. 3-syllable words: māgister 'master' (< L. magister), Séptēbris
 'September', cēllēndre 'coriander', álbāno (dat.sg. of albānus)

(The Fates of the Apostles 45), *álmásse* 'alms'; *Águstus*, *Ómērus*;
áspide 'asp' (< L. *áspidem*)

b. 4-syllable words

- i. *Águstinus* (The Menologium 97), *Cóstantinus*, *Hélisēus*, *Cýriacus*,
Iúliāna, *Fílistina* (< L. *Filistina*), *Ábimēlech*, *Bēnedictus*
- ii. (Pogatscher §§23, 30): *Grēgōrius* (The Menologium 39, 101),
Laurentius (ibid. 146), *Ássýria* (Judith 232), *Bōētius* (The Metres
of Boethius 1.75, 52), *cómmēdia* (Juliana 21)

c. 5-syllable words: *Bártholomēus* (The fates of the Apostles 44, the
Menologium 155), *Mácedōnia* (Solomon and Saturn 199), *Mármēdōnia*
(ibid.), *Cáppodōcia* (ibid. 200)

d. 6-syllable words (see Pogatscher §§24, 59): *Nábochodonóssor*,
Mēsopotámie (< L. *Mesopotámie*) (Solomon and Saturn 199)

On the other hand, if original chief Latin stress fell on the light initial
syllable and that syllable was not lengthened, then there would naturally be
no half-stress on the following light medial syllable in multisyllabic words
(14b) in conformity with the native stress system (Campbell §550; so Luick
§314, but see Bliss p.115 fn.1). However, their inflected forms (15b), including
those forms (15a) from (14a), would have secondary stress on the following
light medial syllable.

(14) a. (= 7c) *Ádam*, *Iácob*, *Sódōm*

b. (= 8b) *Bábilon*, *Élene*, *Lúcifer*, *Sálonon*; *Líbia*, *Sýria* (Solomon
and Saturn 196)

(15) a. (= 9a1) *Ádames* (gen.sg.), *Iácobes*, *Sódōmes*, *Cáines* (Genesis 124)

b. (= 9b) *Bábilōnes* (gen.sg.), *Lúciferēs*

The 'half-stress' so developed in the environment (15) is called "light"
(Campbell §549 and fn.1), in distinction from the "strong" half-stress on the
syllable that earlier had borne the original chief Latin stress (13), which

is therefore said to be neglectable in verse (16) just as in native words (12) on metrical demands.

(16)(= 12) Iācòbes → Iācobes (Psalm 93.7)

However, by synizesis (i.e. syllable reduction due to hiatus (see §2.3.4 below)), multisyllabic words are often reduced by one syllable, with shift of stress, where possible, to the immediately preceding syllable (Campbell §§554-557).

(17) a. (from original 3-syllable words)

Cāines (15a) → Cāines; Iōhannis → Iōhannis

b. (from original 4-syllable words)

i. Bērsabēa (gen.pl.) → Bērsābea; Mālalēhel → Mālālēhel

ii. Grégōrius → Grégōrius; Ítālia → Ítālīa;

Iūliāna (13b) → Iūliāna; Ássyria → Ássyria

c. (from original 5-syllable words)

Bārtholomēus (13c) → Bārtholomeus

II

The following grid-based stress rules of Old English are formulated on the basis of the foregoing (and the following additional) traditional metrical accounts.

Stress, according to Prince, is the result of three kinds of universal beat assignment rules: the quantity-sensitive rule (QS) (§2.1.2.1), the end rules (ER) (§2.1.2.3), and the perfect grid construction rule (PG) (§2.1.2.2). Of these three basic beat assignment rules, QS is mora sensitive, PG rhythm sensitive, and ER position sensitive. And for any phonological word, a minimum of three metrical levels is assumed--the first being the level for demibeat (DB) to use

Selkirk's term, the second for QS, PG, and ER I, and the third for ER II and BA (beat addition) (§2.1.2.4) if applicable, of which QS and ER I feed PG, and they together with ER II in turn feed BA.

Of the many word-level stress rules posited in this paper for Old English, the majority are universal, some language specific with different parameters, and only a few verse specific to be applied on metrical demands. In the present paper, I will first describe in Section One the six aforementioned beat assignment rules, and in Section Two some analytical assumptions that underlie the analysis, viz. mora projection, extrametricality, and the phonological word, and finally state in Section Three the stress adjustment rules for Old English that modify the stress patterns of words generated by the core beat assignment rules.

2.1. Core beat assignment rules

In Old English, all suffixes, being Germanic, are stress neutral; therefore, word stress rules for Old English are simple and straightforward as far as primary stress is concerned, since it invariably falls on the root-initial syllable of a phonological word by ER I and II. Therefore, our main concern will be with placement of subsidiary stresses, which were formerly derived via the Stress Subordination Convention as in the SPE type analysis but in the present paper assigned by various beat assignment rules.

2.1.1. Level I beat assignment rule

(18) the Demibeat Rule (DB)

Assign a beat to every mora of a construction on the first metrical (i.e. syllable) level.

Since Old English words are analyzed in the present paper on mora projection (§2.2.1), a light syllable is marked with one beat and a heavy syllable with

b. $[[[\overset{x}{\underset{x}{\text{color}}}]_r \overset{x}{\text{less}}]_w \overset{x}{\text{ness}}]_w$

However, in Old English, all suffixes, being stress-neutral, are subject to QS and PG alike since they form part of a phonological word (§2.2.3) on which core grid assignment rules apply.

2.1.2.3. the End Rules

There are two End of Domain rules, both of which are initial in Old English—one adding a beat on the second metrical level (ER I)(22) and the other on the third metrical level (and above)(ER II)(23), where $\underline{\quad}$ for mot encloses a phonological word. In Modern English, on the other hand, ER I is initial while ER II is final (see (21)).

(22) ER I: $x \rightarrow \overset{x}{x} / (\underline{\quad\quad\quad})_m$

(23) ER II: $\overset{(x)}{\underset{x}{x}} \rightarrow \overset{(x)}{\underset{x}{x}} / (\underline{\quad\quad\quad})_m$

The following (24) illustrates the foregoing five core beat assignment rules, excluding the third-level Beat Addition, for which see §2.1.2.4.³

(24) a. $\overset{xx}{\text{Beowulfe}}(s) \text{ (gen.sg. of Bēowulf)}(9a)(DB, em) \rightarrow \overset{x}{xx} \overset{x}{xx} x \text{ (QS)} \rightarrow$
 $\overset{x}{xx} \overset{x}{xx} x \text{ (ER II); likewise, (loan-word) } \underline{\text{māgister}} \text{ 'master'}(13a)$

The reason for lengthening the original light initial syllable in māgister (< L. magister)(24a), I believe, is associated with the principle of clash avoidance; had the light initial syllable of magister not been lengthened, its stressed light syllable would then be in clash with the following ^{secondary} stressed syllable, hence to be wrongfully destressed (see (75b)), resulting in the ill-formed *māgister: $\overset{x}{\text{māgiste}}(r)(DB, em) \rightarrow x \overset{x}{xx} x \text{ (QS)} \rightarrow \overset{x}{x} \overset{x}{xx} x \text{ (ER I)} \rightarrow$
 $\overset{x}{x} \overset{x}{xx} x \text{ (ER II)} \rightarrow \overset{x}{x} \overset{x}{xx} x \text{ (DS I).}$

b. $\overset{x}{\text{hafenia}}(n)(9b)(DB, em) \rightarrow \overset{x}{x} x x x \text{ (ER I)} \rightarrow \overset{x}{x} x \overset{x}{x} x \text{ (PG)} \rightarrow$

$\bar{x}$ $\bar{x}$ $\bar{x}$ $\bar{x}$ (ER II); likewise (loan-word) Bábilones (15b)

c. $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ $\bar{x}$ (9aii)(μ B) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ (QS) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ (PG) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ (ER II);

$\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (9aii)(DB, em) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ (QS) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ (PG) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ (ER II);

likewise (loan-word) albāno, áspide (13a)

d. $\bar{x}$ $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (9b)(DB) $\rightarrow$ $\bar{x}$ $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (QS) $\rightarrow$ $\bar{x}$ $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (ER I) $\rightarrow$ $\bar{x}$ $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (ER II);

e. $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ (7a)(DB, em) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ (QS) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ (ER II); likewise, (loan-word) Ādam (14a)

f. $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (and) $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (8b)(DB) $\rightarrow$ $\bar{x}$ $\bar{x}$ $\bar{x}$ (ER I) $\rightarrow$ $\bar{x}$ $\bar{x}$ $\bar{x}$ (ER II); likewise, (loan-word) Bábilon (14b)

2.1.2.4. the Beat Addition rule

Beat Addition (BA)(25) is right dominant in Old English as its word-level ER II is initial, adding a beat on the third metrical level over the rightmost second-level heavy syllable in case more than one secondary stress has been generated in the course of derivation, as illustrated in (26-29).

$$(25) \bar{x}_1 \rightarrow \bar{x} / \bar{x} (\dots) \_\_ \dots)_m$$

where x_1 is the rightmost heavy syllable

Thus, by (25) secondary stress lodges correctly on the penultimate syllable for (26) as analyzed in (27) but on the antepenultimate syllable for (28) as analyzed in (29).

(26) Āgustīnus (13b), Nābochodonossor (13d)

(27) a. $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (DB, em) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (QS) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (ER II) $\rightarrow$

$\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (BA) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (ER II)

b. $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (DB, em) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (QS) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (PG)

$\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (ER II) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (BA) $\rightarrow$ $\bar{x}\bar{x}$ $\bar{x}$ $\bar{x}$ $\bar{x}\bar{x}$ $\bar{x}$ (ER II)

- (28) a. (= 13bi) Gr̃eg̃orĩus, It̃alĩa, c̃omm̃edĩa, P̃amph̃ilĩa (Solomon and Saturn 198), Áss̃ỹrĩa (Judith 232) (< L. Ass̃ỹria)
- b. (= 13c) M̃aced̃onĩa, M̃esopot̃amĩe, M̃armed̃onĩa

(29) a. $\begin{smallmatrix} \text{xx} & \text{xx} & \text{xx} \\ \text{x} & \text{x} & \text{x} \end{smallmatrix}$ Gr̃eg̃orĩu(s) (DB, em) $\rightarrow$ $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (QS) $\rightarrow$ $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (PG) $\rightarrow$
 $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (ER II) $\rightarrow$ $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (BA) $\rightarrow$ $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (ER II)
1 2 3 4

b. $\begin{smallmatrix} \text{xx} & \text{xx} & \text{xx} & \text{xx} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ m̃armed̃onĩa (DB) $\rightarrow$ $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (QS) $\rightarrow$ $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (PG) $\rightarrow$
 $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (ER II) $\rightarrow$ $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (BA) $\rightarrow$ $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (ER II)
1 4 2 3 4

On the other hand, BA in Modern English is left-dominant since its word-level ER II is final, as shown in the following analysis (30-31) on syllable projection.⁴

(30) a. $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ T̃ĩc̃onder̃ōga (DB, em(σ)) $\rightarrow$ b. $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (QS) $\rightarrow$ c. $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (ER II) $\rightarrow$
d. $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (BA) $\rightarrow$ e. $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (ER II) $\rightarrow$ f. $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (output)(T̃ĩc̃onder̃ōga)

But there is also an alternate pronunciation of the word, for which secondary stress optionally lodges on the second heavy syllable.

(31) a. $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ T̃ĩc̃onder̃ōga (= 30c) $\rightarrow$ b. $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (alternate BA) $\rightarrow$ c. $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (ER II) $\rightarrow$
d. $\begin{smallmatrix} \text{x} & \text{x} & \text{x} & \text{x} \\ \text{x} & \text{x} & \text{x} & \text{x} \end{smallmatrix}$ (output)(T̃ĩc̃onder̃ōga)

Granted that both stress patterns given in (30-31) are correct for T̃ĩc̃onder̃ōga, then one may conclude that in Modern English BA may optionally apply on the adjacent syllable only if it is heavy. (Note that in (30-31) the first two syllables are both heavy, i.e. assigned a second-level beat by QS, not PG.)

Now if the same situation is assumed to prevail in Old English with respect to BA, then the two words in (32) could be stressed either 1324 with secondary

stress on the penultimate syllable (33)--hence to be scanned as an A-type verse (' x / ' x) or 1234 with secondary stress on the preceding antepenultimate syllable (34), in spite of the resulting stress clash on the third metrical level, just as in Modern English (31)--hence to be scanned as a D₁-type verse (' / ' \ x), since both syllables in question are heavy.

(32) rihtwīslīce 'righteously', rihtwīsnese 'righteousness' (the Meters of Boethius 22/45 and 59)

(33) rihtwīslīce → a. $\begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \text{x}$ (DB, QS, ER II) → b. $\begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \text{x}$ (BA) →
c. $\begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \text{x}$ (ER II)

(34) rihtwīslīce → a. $\begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \text{x}$ (= 34a) → b. $\begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \text{x}$ (alternate BA) →
c. $\begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \begin{smallmatrix} \text{X} \\ \text{Xx} \end{smallmatrix} \text{x}$ (ER II)

But the question is whether the loan-word Agustīnus (13bi, 27a), for example, with the same syllable structure, i.e. two adjacent heavy syllables, could be scanned likewise. The answer is in the negative, in view of the lack of metrical evidence in support of it, since only the syllable--in this case, the penultimate syllable--that had borne the chief stress in Latin could bear a secondary stress after it had been transferred to the root-initial syllable (see (13)). Therefore, the correct scansion for (32) would in all probability be (33) by (25).

The BA rule, as formulated in (25), therefore, correctly accounts for the secondary stress on the antepenultimate, not penultimate, syllable for the multisyllabic loan-words of the type (28) whose last two syllables (in hiatus) are short, preceded by a medial syllable which is invariably long since it is the syllable which had borne the original Latin stress and which is lengthened if originally short after the original stress had been transferred to the root-initial syllable (see Pogatscher §27). Thus the Old English BA (25) rightly accounts for the original Latin primary stress now being preserved as a secondary

stress in Old English loan-words (Campbell §548; also see Huguenin §34).

On the other hand, a derivation of the OE stress pattern Grégôrius from the Latin Gregorius in a non-grid fashion would require additional Latin Stress Rule (LSR) (see O'Neil 1973) together with the Stress Retraction Rule (SRR) that shifts the chief stress assigned by LSR to the root-initial syllable by the Germanic Stress Rule (GSR = ER II) with the concomitant Stress Subordination Convention (SSC) (see Halle and Keyser 1971). However, the optimal grammar of Old English would not need these additional rules posited solely for foreign words if their stress patterns could be accounted for by the same native stress assignment rules, as proposed in the present analysis.⁵

2.2. Analytical assumptions

In addition to the above six beat addition rules, the present analysis operates on the following analytical assumptions: mora projection, extra-metricity, and the phonological word.

2.2.1. Mora projection

The analysis of the following native as well as loan words on mora projection (35A) would correctly yield secondary stress for (35a) by PG and for (35b) by QS but not for (35c) on account of a stress clash; hence, (35a) is correctly differentiated from (35c) by an analysis on mora projection but not on syllable projection as the latter would wrongfully treat (35a) and (35c) on a par, with no secondary stress for (35a)--hence, the correctness of the analysis on rime projection for Old English.

(35) A (on mora projection)

B (on syllable projection)

a. $\begin{array}{c} \text{x} \\ \text{x} \text{ x} \end{array}$ sealfroðe (9a)(DB, QS, PG, ER II);

$\begin{array}{c} \text{x} \\ \text{x} \end{array}$ x x

similarly (loan-word) aspide (13a)

b. $\begin{array}{c} \text{x} \\ \text{x} \text{ x} \end{array}$ ~~æ~~pelinge (9b)(DB, QS, ER I, ER II);

$\begin{array}{c} \text{x} \\ \text{x} \end{array}$ x $\begin{array}{c} \text{x} \\ \text{x} \end{array}$ x

similarly (loan-word) Luciferes (15b)

c. $\begin{smallmatrix} \bar{x} \\ \bar{x} \\ \bar{x} \end{smallmatrix} \bar{x} \bar{x}$ (8b)(DB, ER I, ER II); $\begin{smallmatrix} \bar{x} \\ \bar{x} \\ \bar{x} \end{smallmatrix} x x$

similarly (loan-word) Babilon (14b)

In Modern English, on the other hand, a stress clash that arises on the second level by PG is permitted because of the Anti-lapse Filter (see (36) below), which forbids a sequence of two unstressed syllables creating a ternary foot within the domain of a 'root', except when such a rhythmic lapse arises through extrametricality, destressing, or by the 'Abracadabra' rule (see Selkirk pp.84, 109, 117), as in the following derivations of vanilla and abracadabra analyzed on syllable projection.

- (36) a. $\begin{smallmatrix} \bar{x} & \bar{x} & \bar{x} \\ \bar{x} & \bar{x} & \bar{x} \end{smallmatrix}$ (DB) $\rightarrow \bar{x} x x$ (ER I) $\rightarrow \bar{x} \bar{x} x$ (PG) $\rightarrow \bar{x} - \bar{x} x$ (ER II) $\rightarrow$
 $x \bar{x} x$ (Initial Destressing)
- b. $\begin{smallmatrix} \bar{x} & \bar{x} & \bar{x} & \bar{x} & \bar{x} & \bar{x} \\ \bar{x} & \bar{x} & \bar{x} & \bar{x} & \bar{x} & \bar{x} \end{smallmatrix}$ (DB) $\rightarrow \bar{x} x x x x$ (ER I) $\rightarrow \bar{x} \bar{x} x \bar{x} x$ (PG) $\rightarrow$
 $\begin{smallmatrix} \bar{x} & -\bar{x} \\ \bar{x} & \bar{x} \end{smallmatrix} x \begin{smallmatrix} \bar{x} \\ \bar{x} \end{smallmatrix} x$ (ER II) $\rightarrow \bar{x} x x \begin{smallmatrix} \bar{x} \\ \bar{x} \end{smallmatrix} x$ (the Abracadabra Destressing)

However, the language specific Anti-lapse rule does not apply in Old English, since, if it did, (35c) would wrongfully be assigned secondary stress on the post-tonic second syllable (*wúnòde, *Bábilon).

The concept of two moras which equates a heavy syllable with a sequence of two light syllables is also utilized in the formulation of Sievers' law (37), which converts [-syl] i to [+syl] i after two moras.

$$(37) \begin{bmatrix} -\text{cons} \\ +\text{high} \end{bmatrix} \rightarrow [+syl] \text{ if } \left\{ \begin{array}{l} \bar{V}(C) \\ VCC \\ VCVC \end{array} \right\} \text{ —}$$

2.2.2. Extrametrical segments and morphemes

2.2.2.1. Extrametrical segments

The last consonant of a phonological word is analyzed extrametrical (em) by rule (38) to derive correct stress patterns for such words as (39).

(38) $C \rightarrow em / \dots \_m$

(39) a. $\overset{\bar{x}}{B}\overset{\bar{x}}{a}\overset{\bar{x}}{b}\overset{\bar{x}}{i}\overset{\bar{x}}{l}\overset{\bar{x}}{o}\overset{\bar{x}}{n}\overset{\bar{x}}{e}(s)$ (15b)(DB and em) $\rightarrow \overset{\bar{x}}{x} \ x \ x \ x$ (ER I) $\rightarrow \overset{\bar{x}}{x} \ x \ \overset{\bar{x}}{x} \ x$ (PG) $\rightarrow$
 $\overset{\bar{x}}{x} \ x \ \overset{\bar{x}}{x} \ x$ (ER II) (Bábilónes)
 *b. $\overset{\bar{x}}{B}\overset{\bar{x}}{a}\overset{\bar{x}}{b}\overset{\bar{x}}{i}\overset{\bar{x}}{l}\overset{\bar{x}}{o}\overset{\bar{x}}{n}\overset{\bar{x}}{e}\overset{\bar{x}}{s}$ (DB) $\rightarrow x \ x \ x \ \overset{\bar{x}}{x}x$ (QS) $\rightarrow \overset{\bar{x}}{x} \ x \ x \ \overset{\bar{x}}{x}x$ (ER I) $\rightarrow$
 $\overset{\bar{x}}{x} \ x \ x \ \overset{\bar{x}}{x}x$ (ER II) (Bábilónes)

Hence, the correct stress pattern of the word Babilones is (39a) with the last consonant analyzed extrametrical, not (39b) whose last consonant has not been analyzed extrametrical. Likewise, the final consonant of the stressed prefix (under-) of ((under)_m(cyning)_m)_m, has to be analyzed extrametrical for its last syllable not to be incorrectly accorded secondary stress.

However, since the stress pattern of a monosyllabic word would not be affected by (38) as it is invariably stressed by ER I, the rule (38) will by convention refer only to a phonological word of more than one syllable. Thus the final syllable of a disyllabic word ending in two consonants (7a,b), for example, will be first stressed by QS (40a)(since the bimoricity of the final heavy syllable (-VCC) of the word would remain unaffected even if its last consonant was analyzed extrametrical) before it gets to be destressed (40b)(see §2.3.2.2)(cf. cómo(n), devélo(p) but tormén(t) in Modern English).

(40) a. $\overset{\bar{x}}{h}\overset{\bar{x}}{l}\overset{\bar{x}}{a}\overset{\bar{x}}{f}\overset{\bar{x}}{o}\overset{\bar{x}}{r}(d)$ $\rightarrow$ b. $\overset{\bar{x}}{x}x \ \overset{\bar{x}}{x}x$

Even in verse, a word final syllable consisting of a short vowel with a single consonant (-VC) is never accorded secondary stress, except on metrical demands

as in (41), in which case the extrametrical rule (38) is overridden metrically.

(41) a. Iábel nó^ámá (Genesis 1078), an A-type verse

b. énig nē wéarð (ibid. 2215), an E₁-type verse (see Huguenin §78)

The possibility of positing syllable extrametricality (em(σ)) for Old English, which has been extended to nouns and suffixed adjectives and suffixed verbs in Modern English, cannot be entertained, since, if it did, it would wrongly deprive such words as (39) of their rightful secondary stress on the penultimate syllable, as shown in (42).

(42) Bábílō^x(nes)(DB, em(σ)) → ^xx x (ER I) → ^xx x x (ER II) →
^x
^xx x x (output) (*Bábilones)

2.2.2.2. Extrametrical morphemes (see Campbell §§72-74, 82; Wright §12)

The prefixes ge-, for-, be- are lexically marked [-stress] (43), while verbal and adverbial prefixes are structurally marked [-stress] (44); hence, they are bracketed differently from stressed substantival (i.e. nominal and adjectival) prefixes, since the latter are phonological words (§2.2.3) while the former are not.

(43) X → em / [__[Y]]_α

where X = $\begin{Bmatrix} \text{ge-} \\ \text{for-} \\ \text{be-} \end{Bmatrix}$ Y = the root α = a lexical category

a. verbs (the [X[Y]]_V type): ge-stándan 'to stand', for-wrécan 'to banish', be-gān 'to go'

b. nouns (the [X[Y]]_N type): ge-féoht 'fight', ge-béd 'prayer', hánd-ge-swiŋ ([[hand]_N[ge[swing]]_N]_N) 'blow' (Elene 115); for-wýrd 'ruin', be-bód 'command', be-hát 'promise'

c. adjectives (the [X[Y]]_A type): ge-súnd 'sound', ge-þéle 'congenial', ge-líc 'alike', ún-ge-læred ([[un][ge[læred]]_A]_A) 'unlearned';

for-gietol 'forgetful', ún-for-cūð ([[un][for[cūð]]]_A_A) 'brave'
 (Maldon 51); be-hēfe 'suitable', ún-be-bōht ([[un][be[bōht]]]_A_A)
 'unsold'

(44) $X \rightarrow \text{em} / \text{[]}_\alpha$

where X = any prefix, Y = the root, and α ranges over V and Adv

- a. verbs (the $[X[Y]]_V$ type): a-þéncan 'to devise', on-sácan 'to deny',
 oþ-gān 'to escape'
- b. adverbs (the $[X[Y]]_{\text{Adv}}$ type): on-wég 'away', be-fóran 'before',
 wiþ-ūtan 'without', tō-dæg 'today', tō-gædere 'together'

Therefore, the stress doublets (45a) with stressed prefixes be- and for- are exceptional, being reanalyzed forms, which hence are to be bracketed as (45b).

(45) a. bé-bōð 'command', bé-hāt 'promise', fór-wýrd 'ruin'

b. [[be][bōð]]_N, [[be][hāt]]_N, [[for][wýrd]]_N

2.2.3. The phonological word

In the traditional SPE type analysis of Old English stress patterns, Stress Retraction Rule (SRR) and Compound Word Stress Rule (CSR) have been posited along with the concomitant Stress Subordination Convention (SSC) that automatically reduces primary stress to secondary stress, in order to derive the following forms--with SRR applied to (46) and CSR to (47).

(46) prefixed substantives (= 6a)

- a. prefixed nouns: ánd-wéald 'power' (and-wéald → ánd-wéald)
 b. prefixed adjectives: án-sùnd 'sound' (an-sùnd → án-sùnd)

(47) compound words (= 6b)

þéod-cýning 'monarch' (þéod-cýning → þéod-cýning)

However, simple words, along with prefixed substantives and compound

words, are analyzed in this paper as (48) and (49) respectively with the introduction of the prosodic category of the phonological word, which is defined as a constituent bearing a beat on the third metrical level by the word-level End Rule II, with the result of doing away with both the SRR and SSC since they are no longer necessary.

(48) simple words of the $(\quad)_m$ or $((\quad)_m)_m$ type

a. (unprefixed) simple words, with or without suffixes:

$[fæder]_N$ 'father' $\rightarrow (\overset{\overset{x}{x}}{\overset{\overset{x}{x}}{fæde}}(r))_m$

$[far-an]_V$ 'to go' $\rightarrow (\overset{\overset{x}{x}}{\overset{\overset{x}{x}}{fara}}(n))_m$

b. words with unstressed prefixes (and suffixes):

$[be[far-an]_V]_V$ 'to go' $\rightarrow (b\overset{\overset{x}{x}}{\overset{\overset{x}{x}}{e}}(\overset{\overset{x}{x}}{\overset{\overset{x}{x}}{fara}}(n))_{m\ m}$

(49) 'phonological' compounds of the $((\quad)_m(\quad)_m)_m$ type

a. words with stressed prefixes:

$[[and][weald]_N]_N$ 'power' $\rightarrow ((\overset{\overset{x}{x}}{xx})(\overset{\overset{x}{x}}{xx}))_{m\ m}, \rightarrow (\overset{\overset{x}{x}}{xx} \overset{\overset{x}{x}}{xx})_m, \rightarrow (\overset{\overset{x}{x}}{xx} \overset{\overset{x}{x}}{xx})_m,$

(flattening); $[[an][sund]_A]_A$ 'sound' $\rightarrow ((\overset{\overset{x}{x}}{x})(\overset{\overset{x}{x}}{xx}))_{m\ m}, \rightarrow (\overset{\overset{x}{x}}{x} \overset{\overset{x}{x}}{xx})_m, \rightarrow$

$(\overset{\overset{x}{x}}{xx} \overset{\overset{x}{x}}{xx})_m, (flattening)$

b. compound words:

$[[\beta eod]_N[cyning]_N]_N$ 'monarch' $\rightarrow ((\overset{\overset{x}{x}}{xx})(\overset{\overset{x}{x}}{xx}))_{m\ m}, \rightarrow (\overset{\overset{x}{x}}{xx} \overset{\overset{x}{x}}{xx})_m,$
 $\rightarrow (\overset{\overset{x}{x}}{xx} \overset{\overset{x}{x}}{xx})_m, (flattening)$

It is to be noted from the above analysis that a stressed prefix such as and- and an- in (46) is now analyzed as a phonological word on a par with a simple word (48a)(also see McCarthy 1986; Halle and Vergnaud 1987), as shown

in (49a), even though a stressed prefix is a morpheme from a morphological point of view, and consequently, a word with a stressed prefix (49a) is now bracketed and analyzed prosodically on a par with a (morphological) compound word (49b); that is to say, they are identical prosodically, differing only morphologically. Therefore, the major difference between a simple word like (48a) and a stressed prefix (49a), for example, is that a stressed prefix is an uncategorized phonological word, whereas a simple word is a categorized word (N,V,A); similarly, the major difference between a simple word and a stress-prefixed word or a compound word is that the word-level ER II may apply once to a 'simple' word as for (48) but at least twice to a phonological compound (49). In the present analysis, square brackets are used to enclose morphological structure, and parentheses prosodic structure; however, where morphological bracketings do not differ crucially from their prosodic bracketings, the latter will be suppressed for ease of exposition.

Even in Modern English, stressed prefixes have the status of phonological words, as evidenced by syllabification, nasal assimilation, and comparative formation (see Booij and Rubach 1984, pp.13 ff.)

1. The domain of syllabification is the phonological word, with the morphological boundary coinciding with a syllable boundary; hence, syllabification is blocked in (50a) by phonological word junctures, and the maximal onset principle is consequently not observed, as in compound words, unlike the words with unstressed prefixes or the suffixed words in (50b).

(50) a. ((un)_m (érring)_m)_m, (* un-erring); also ((un)_m (átered)_m)_m,
 $\begin{array}{c} \vee \\ \sigma \end{array}$ $\begin{array}{c} | \vee \\ \sigma \sigma \end{array}$

((dis)_m (advántage)_m)_m,

b. (un-áble)_m (grammatical-ity)_m
 $\begin{array}{c} | \vee \\ \sigma \sigma \end{array}$ $\begin{array}{c} \vee \\ \sigma \end{array}$

2. Nasal Assimilation applies obligatorily within phonological words (51a) but optionally across phonological words (51b).

- (51) a. (finger)_m (Lincoln)_m (inform)_m (il-legal)_m (< (in(legal))_m)
 b. ((un-)_m(grammatical)_m)_m, ((rain)_m(glass)_m)_m, ((in)_m(fix)_m)_m,
 ((in)_m(Korea)_m)_m.

3. Comparative suffix -er is added to a phonological word of two syllables or less; hence, (52a) is well-formed but (52b) ill-formed.

- (52) a. (happy)_m → (happier)_m; hence, unhappier, which is bracketed
 [[[un][happy]_A]_Aer]_A morphologically, is bracketed ((un)_m((happy)_mer)_m)_m,
 phonologically (see (56a)), to result in ((un)_m(happier)_m)_m,
 b. (excellent)_m → *(excellenter)_m

However, Modern English stressed prefixes differ from the Old English equivalents, in that while the former are weak sisters (53a) (with the exception of in-finite, in-famous etc.), the latter are strong sisters (53b).

- (53) a. ((un)_m(grammatical)_m)_w,
 b. ((un)_m(synnig)_m)_w,

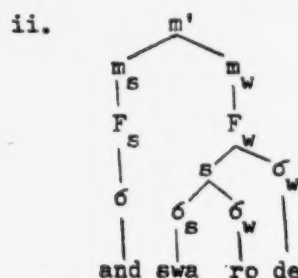
Henceforth, the input for (54) for stress assignment rules will be phonological words (56), not morphological words (55), since suffixes syllabify with the preceding syllables (see (56aii)). It is apparent then that morphological and phonological bracketings need not be isomorphic.

- (54) a. ¹and-swa²r³ode '(he) answered'
 b. ¹un-soð²fa³stnes 'injustice' (Psalm 54.9)
 c. ¹beod-cyn²ing³es 'of the monarch'
 (55) a. [[[and][swar]]_Node]_V

b. [[[un][sōð]_N^{fest}]_A^{nes}]_N

c. [[[pēod]_N[cyning]_N]_N^{es}]_N

(56) a. i. ((and)_m(swarode)_m)_m → ((xx)_m(x x x)_m)_m, (DB) → ((^xx)_m(^xx x)_m)_m,
 (QS, ER I) → ((^xx)_m(^xx x x)_m)_m, (ER II) → (^xx^x_m ^xx x x)_m, (ER II) →
 (^xx^x_m ^xx^x_m x)_m, (SA)(see (87))



b. ((un)_m(sōðfestnes)_m)_m → ((x)_m(xx xx x)_m)_m, (DB, em)
 → ((^xx)_m(^xx^x_m ^xx x)_m)_m, (QS, ER I) → ((^xx)_m(^xx^x_m ^xx x)_m)_m, (ER II)
 → (^xx^x_m ^xx^x_m x)_m, (ER II)

c. ((pēod)_m(cyninges)_m)_m → ((xx)_m(x xx x)_m)_m, (DB, em)
 → ((^xx)_m(^xx ^xx x)_m)_m, (QS, ER I) → ((^xx)_m(^xx^x_m ^xx x)_m)_m, (ER II)
 → (^xx^x_m ^xx^x_m x)_m, (ER II) (see (78))

Thus, stress assignment rules operate on phonological words for derivation of correct stress patterns for Old English. For a similar analysis, this time, however, for reduplication, involving the attachment of a morpheme skeleton to some stem morpheme at phonological (not morphological) structure, see Marantz and McIntyre (1987).

2.3. Stress adjustment rules

Having sketched in the preceding sections the six core beat addition rules, I will explain in this section some Old English stress adjustment rules

applying on their outputs.

2.3.1. On the so-called Stress Retraction Rule

Of the various derived non-compound words--denominative verbs (57a), deverbial adjectives (57b) and their derived nouns (57c), prepositional adverbs (57d), and prefixed deverbial substantives (57e), only the last type (57e) undergoes stress retraction, all the others (57a-d) retaining their underlying chief stresses.

(57) a. denominative verbs (Campbell §77; Wright §14)

the $[[X]_N]_V$ or $[[[X][Y]]_N]_V$ type: *ōrettan* 'to fight' (< *ōret* 'fight'), *fúltumian* 'to support' (< *fúltum* 'support'); *ánd-wýrdan* 'to answer' (< *ánd-wýrde* 'answer'), *ánd-swàrian* 'to answer' (< *ánd-swàru* 'answer') (54a)

b. deverbial adjectives (Campbell §81)

the $[[X[Y]]_{VZ}]_A$ type, where Z is an adjective forming past or present ppl. suffix: *under-þēodod* 'subjected' (< *under-þēodan* 'to subject'), *wíper-wínniende* 'revolting' (< *wíper-wínnian* 'to revolt')

c. nouns from deverbial adjectives (57b) (Campbell §77; Wright §11)

the $[[[X[Y]]_{VZ}]_A nes]_N$ type, where Z is an adjective forming participial suffix: *on-gíeten-ness* 'understanding' (< *on-gíeten* < *on-gíetan* 'to understand'), *ā-líefed-ness* 'permission' (< *ā-líefed* < *ā-líefan* 'to permit'), *for-lóren-ness* 'destruction' (< *for-lóren* < *for-lēosan* 'to destroy'), *on-fángen-ness* 'reception' (< *on-fángen* < *on-fōn* 'to take'); *for-gífen-ness* - *for-gíf-ness* 'forgiveness' (< *for-gífen* < *for-gíefan* 'to forgive') (His forgifnesse / gumum to helpe (Christ 427)): the word in the cited verse, however, is really a shortened form of forgifenness according to OED since -nes(s) is a noun-forming suffix added to

a participial adjective form forgifen.

d. prepositional adverbs (Campbell §82)

the $[X[\acute{Y}]]_{Adv}$ type: on-wég 'away', tō-gédere 'together',
þær-inne 'therein'

e. prefixed deverbal substantives (Campbell §73)⁶

the $[X[\acute{Y}]]_V \rightarrow [[\acute{X}][\acute{Y}]]_{(N,A)}$ type:

i. nouns: $[on[gít]an]_V \rightarrow [[ónd][gít]]_N$: ónd-gít 'understanding'

(< on-gítan 'to understand'), bí-genga 'inhabitant' (< be-gán

'to occupy'), án-ginn 'beginning' (< on-gínnan 'to begin' (Genesis

578, Maldon 242), á-wiælm 'fountain' (< a-wéallan 'to well up'),

wíþer-saca 'adversary' (< wíþer-sácan 'to refuse')

ii. adjectives: $[oþ[gá]an]_V$ (oþ-gán 'to escape') $\rightarrow [[\acute{u}þ][gènge]]_A$

(úþ-genge 'evanescent')

Prefixed deverbal substantives (57e) could thus be explained as being derived from the underlying root-stressed verbs by Stress Retraction Rule (58), which retracts the primary stress on the root to the prefix, together with the Gaps-filling Convention (59) (see Halle and Vergnaud p.52), as shown in (60), where the beat so supplied is symbolized by the circle around the x.

(58) Stress Retraction Rule (SRR)

$$[x_i[\overset{x}{x}_j]]_{\alpha} \rightarrow [[\overset{x}{x}_i][\overset{x}{x}_j]]_{\beta}$$

where α is a verb, and β is a substantive.

Conditions: (1) x_i is ge-, for-, be-

(2) x_j is the root morpheme, with zero derivational
suffix (see fn. 6(a))

(59) Gaps-filling Convention

When the topmost beat generated by ER II moves by SRR (58) from the root to the preceding morpheme, then the gaps in the latter's column are automatically filled in.

$$(60) [\overset{x}{\underset{\cdot}{\text{on}}}[\overset{x}{\underset{\cdot}{\text{git}}}]_V - [[\overset{x}{\underset{\cdot}{\text{ond}}}][\overset{x}{\underset{\cdot}{\text{git}}}]_N$$

Therefore, SRR (58) applies to (57e) but neither to (61) by the first condition (x_i) nor to (57b,c) by the second condition (x_j) of the rule.

(61) (see (43))

- a. be-bód 'command' (< be-bēodan 'to command'), be-hāt 'vow' (< be-hātan 'to promise'), be-lāf 'remainder' (< be-līfan 'to keep'), be-gāng 'practice' (< be-gāngan 'to provide')
- b. for-bód 'prohibition' (< for-bēodan 'to forbid'), for-wýrd 'ruin' (< for-wýrdan 'to ruin')
- c. ge-feóht 'fight' (< ge-feóhtan 'to fight')

Therefore, the following stress doublets with SRR applied (62a,c) where it should not and not applied (62b) where it should be best analyzed as exceptions, having been reanalyzed analogically--as compound verbs in the case of (62c) (see Halle and Keyser p.95; Booij and Rubach p.315).

- (62) a. be-hāt 'vow', for-wýrd 'ruin' (45)
- b. on-ginn 'beginning' (cf. (57e))(Wright §11)
- c. únder-bēoded, wíper-hýcgende (cf. (57b))(Wright §81)

Phonetically, stressed prefixes retain their full (strong) forms, and unstressed prefixes their reduced (weak) forms (Campbell §73), as shown below in (63), where the prefixes in the left column are the stressed ones, being affixed to substantives, and those in the right column are the unstressed ones, being affixed to verbs.

(63) [+stress]	[-stress]
ē- (ē-wielm 'fountain')	- a- (a-weállan 'to well up')
and- (and-saca 'apostate')	- on- (on-sacan 'to deny')
bī- (bī-genga 'inhabitant')	- be- (be-gān 'to occupy')
ūp- (ūp-genge 'evanescent')	- oþ- (oþ-gān 'to devise')

question has to be bracketed as hagosteald-mon as entered in Bosworth and Toller's Supplement and Clark Hall's Anglo-Saxon Dictionary; however, the word is also bracketed as hago-stealdman in Bosworth and Toller's Anglo-Saxon Dictionary, which implies the scansion of the verse as a D_1 -type verse (103b), even though I believe the correct bracketing of the word is (103a).

(103) a. géong hagosteald-mon (D_2)

b. géong hago-stealdmon (D_1)

(104) a. (for (103a))

$$(((\overset{x}{\underset{\cdot}{\text{hag}}})_m(\overset{x}{\underset{\cdot}{\text{steald}}})_m)_m, (\overset{x}{\underset{\cdot}{\text{mon}}})_m)_m \text{ (DB)} \rightarrow (((\overset{x}{\underset{\cdot}{\text{x}}})_m(\overset{x}{\underset{\cdot}{\text{xx}}})_m)_m, (\overset{x}{\underset{\cdot}{\text{x}}})_m)_m \text{ (QS,}$$

$$\text{ER I, ER II)} \rightarrow ((\overset{x}{\underset{\cdot}{\text{x}}} \times \overset{x}{\underset{\cdot}{\text{xx}}})_m, (\overset{x}{\underset{\cdot}{\text{x}}})_m)_m \text{ (ER II)} \rightarrow (\overset{x}{\underset{\cdot}{\text{x}}} \times \overset{x}{\underset{\cdot}{\text{xx}}} \times \overset{x}{\underset{\cdot}{\text{x}}})_m \text{ (ER II)} \rightarrow$$

$$(\overset{x}{\underset{\cdot}{\text{x}}} \times \overset{x}{\underset{\cdot}{\text{xx}}} \times \overset{x}{\underset{\cdot}{\text{x}}})_m \text{ (flattening)} \quad \overset{1}{\text{hag}} \quad \overset{3}{\text{steald}} \quad \overset{2}{\text{mon}}$$

b. (for (103b))

$$(((\overset{x}{\underset{\cdot}{\text{hag}}})_m((\overset{x}{\underset{\cdot}{\text{steald}}})_m(\overset{x}{\underset{\cdot}{\text{mon}}})_m)_m)_m \text{ (DB)} \rightarrow (((\overset{x}{\underset{\cdot}{\text{x}}})_m((\overset{x}{\underset{\cdot}{\text{xx}}})_m(\overset{x}{\underset{\cdot}{\text{x}}})_m)_m)_m \text{ (QS,}$$

$$\text{ER I, ER II)} \rightarrow ((\overset{x}{\underset{\cdot}{\text{x}}} \times \overset{x}{\underset{\cdot}{\text{xx}}} \times \overset{x}{\underset{\cdot}{\text{x}}})_m)_m \text{ (ER II)} \rightarrow (\overset{x}{\underset{\cdot}{\text{x}}} \times \overset{x}{\underset{\cdot}{\text{xx}}} \times \overset{x}{\underset{\cdot}{\text{x}}})_m \text{ (ER II)} \rightarrow$$

$$(\overset{x}{\underset{\cdot}{\text{x}}} \times \overset{x}{\underset{\cdot}{\text{xx}}} \times \overset{x}{\underset{\cdot}{\text{x}}})_m \text{ (flattening)} \quad \overset{1}{\text{hag}} \quad \overset{2}{\text{steald}} \quad \overset{3}{\text{mon}}$$

Now if RR is to operate on the output of (104b) before flattening, then

(105) would result.

$$(105) \quad \overset{x}{\underset{\cdot}{\text{x}}} \times \overset{x}{\underset{\cdot}{\text{xx}}} \times \overset{x}{\underset{\cdot}{\text{x}}} \text{ (104b)} \rightarrow (\overset{x}{\underset{\cdot}{\text{x}}} \times \overset{x}{\underset{\cdot}{\text{xx}}} \times \overset{x}{\underset{\cdot}{\text{x}}})_m \text{ (RR)} \rightarrow (\overset{x}{\underset{\cdot}{\text{x}}} \times \overset{x}{\underset{\cdot}{\text{xx}}} \times \overset{x}{\underset{\cdot}{\text{x}}})_m \text{ (flattening)}$$

$$\quad \overset{1}{\text{hag}} \quad \overset{3}{\text{steald}} \quad \overset{2}{\text{mon}}$$

Thus in view of the stress patterns of the various words analyzed in the present section (and elsewhere ((29), (34), (56b,c), (109b)), it can be concluded that RR in Old English is optional, since stress clashes are regularly tolerated on the third-metrical level (and up), just as in Modern English (31c)(see Selkirk pp.103, 182).

wíþer- (wíþer-saca 'adversary') - wíþ- (wíþ-sácan 'to refuse')

Thus bí-gang 'practice', for example, shows the stressed prefix with lengthened vowel from the underlying verb be-gangan 'to practice'. Similarly, an originally short vowel is lengthened under stress, giving rise to the following alternating forms: þū 'thou' (OE) - þu (Gothic), mē 'me' (OE) - me (Gothic), sē (demonstrative pronoun) - se (relative pronoun), etc., just as in Modern English, as in rē-fill (N) vs. re-fill (V), and rē-run (N) vs. re-run (V).

The forms given in (64) on the one hand and those given in (65) and (66) on the other are all verbs; nevertheless, the former are stressed on the roots since the pre-root elements are affixes while the latter are stressed on the pre-root elements--on the first pre-root elements in the case of (66)--since they are prepositional adverbs (PAdv). Hence, those in (64) are simple verbs and those in (65) and (66) compound verbs. It is to be noted that verbs with two pre-root elements are always stressed on the first as the second are invariably unstressed prefixes just like those in (67) (Campbell §80; Huguenin §§19, 30; Wright §14).

(64) of the $[X[\acute{Z}]_V]_V$ type:

æt-níman 'to deprive', geond-þéncan 'to think over', ofer-swíþan 'to overcome', of-féallan 'to fall off, decline', tō-dēlan 'to divide', tō-brécan 'to destroy' (Maldon 242), tō-twáman 'to separate' (ibid. 241), þurh-wúnian 'to abide continuously', under-níman 'to comprehend', wíþ-fōn 'to grasp at', ymb-hwéorfan 'to revolve'

(65) of the $[[\acute{X}]_{PAdv}[\acute{Z}]_V]_V$ type:

æfter-sprécan 'to claim', bí-stándan 'to stand by', bí-líbban 'to live', éft-flōwan 'to flow back', fóre-gangan 'to precede', frá-m-hwéorfan 'to turn away', ín-cuman 'to come in', ín-béran

'to carry in', *míd-wësan* 'to be with', *míd-wunian* 'to dwell with',
óf-gân 'to seek', *ón-lôcian* 'to look at', *tô-dôn* 'to do', *tô-cwëðan*
 'to say', *tô-bringan* 'to bring', *tô-cuman* 'to come', *ût-drifan* 'to
 drive out'

(66) of the $[[X]_{PAdv}[Y[Z]_V]_V]_V$ type:

fóre-ge-scrifan ($[[fore]_{PAdv}[ge[scrifan]_V]_V]_V$) 'to ordain',
óf-a-drifan 'to drive away', *án-for-lëtan* 'to abandon'

(67) phonological compound words of the $[[X]_{\beta}[Y[Z]_{\alpha}]_{\alpha}]_{\alpha}$ type, where α is
 a lexical category, and β may (67b) or may not be a lexical category
 (67a):

a. stress-prefixed words

nouns: *mís-ge-hýgd* ($[[mis][ge[hygd]_N]_N]_N$) 'evil thought'; adjectives:
ún-for-cūð ($[[un][for[cūð]_A]_A]_A$) 'not wicked; noble'; on the other
 hand, *un-be-fóhtene* 'unopposed' (Maldon 570) is exceptional since
 the pre-fix *un-* is always stressed (Campbell §75); adverbs:
ún-for-cūðlice 'nobly', *ún-ge-wēnendlice* 'unhoped for'

b. compound words: *mōd-ge-þýldig* ($[[mōd]_N[ge[þýldig]_A]_A]_A$) 'patient',
ērend-ge-writ 'written message', *ēð-be-gēte* 'easily acquired'

Now certain prefixes (i.e. (prepositional) adverbs) (68a) are said to occur
 always stressed ($[+stress]$) and other prefixes (68b) unstressed ($[-stress]$),
 while some (68c) are identical in both stressed and unstressed forms ($[±stress]$)
 (Campbell §§73, 79-80); moreover, those in (68b) including some from (68c)
 appear only as bound forms.

(68) a. $[+stress]$: *æfter-*, *fore-*, *from-*, *mid-*, *ongēan-*, *æt-*, *bī-*

b. $[-stress]$: *be-*, *ge-*, *for-*; *geond-*, *oþ-*, *ā-* (- a-)

c. $[±stress]$: *for-*, *of-*, *ofer-*, *on-*, *tō-*, *þurh-*, *under-*, *wiþ-*, *ymb(e)-*

Those stressed prefixes in (68a) and some from (68c) have been called
 'separable prefixes' (i.e. free morphemes as they are (prepositional) adverbs),

hence, cyclical, being treated on a par with simple words as lexical items, and those unstressed ones in (68b) and some from (68c) 'inseparable prefixes' (i.e. bound morphemes), hence, noncyclical like unstressed suffixes; hence, the former can be compared to the separable verbal prefixes in German (70a) and also Dutch as they occur optionally as separate words in 'loose syntactic combination' before verbs (69a) as well as after verbs (69b) (Campbell §§78-79; Harrison 1892), with prepositional adverbs more strongly stressed than the verbs themselves.¹⁰ (In the following Old English examples (69), the 'two-word' verbs are underlined once (= italicized) and their object pronouns twice (= gothicized).)

(69) a. i. him bī stōdon 'they stood by him' (Beowulf 3047)

hēt ða in beran '(he) orderend to carry in' (ibid. 2152)

De þē mīd wuniað 'who dwells with thee' (Andreas 101)

nīht æfter cymed 'night comes after (i.e. follows)' (Order of the World 72)

ii. De him raðe ðæs æfter cōm 'who followed him quickly'

Orosius 86/25)

him Pompeius æfter fōr 'Pompey followed him' (ibid. 240/26)

b. i. þā cōm æfter nīht 'then followed night' (Genesis 2450)

ii. ða fōr he him æfter 'then he followed him' (Orosius 240/31)

(70) a. verbs with separable prefixes (i.e. (prepositional) adverbs):

zú-màchen 'to close', zú-ge-màcht (ppl.) 'closed', machen die

Bücher zu 'close the books'; áuf-gèben 'to give up', áuf-ge-gèben

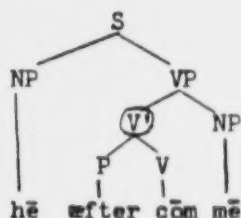
(ppl.) 'given up', geben sie auf 'give up'

b. verbs with inseparable prefixes: er-blicken 'to see',

ver-stéhen 'to understand'

The verbs with separable prefixes in question in (69) are bī-standan, in-beran, mid-wunian, after-cuman, after-faran respectively, consisting of a prepositional adverb (i.e. particle = P) plus a verb (V), forming a verbal unit (V'),⁷ as analyzed in (71), with optional preverbal movement of predicate NP (69a) or postverbal movement of P (69b).

(71) hē after cōm mē 'he came after (i.e. followed) me'



If, on the other hand, a word formation rule like category change ($V \rightarrow N$) (morphology) is assumed to precede stress assignment (phonology), then (60) is to be analyzed as (73), where categorial change is seen as triggering a change in the stress pattern of a word.

(73) $[\text{on}[\text{git-an}]_V]_V \rightarrow [[\text{ond}][\text{git}]]_N \rightarrow ((\text{x}\text{x})_m(\text{x})_m)_m, (\text{DB}, \text{em}) \rightarrow$

$((\overset{\text{x}}{\text{x}}\text{x})_m(\overset{\text{x}}{\text{x}})_m)_m, (\text{ER I}, \text{ER II}) \rightarrow (\overset{\text{x}}{\text{x}}\text{x} - \overset{\text{x}}{\text{x}})_m, (\text{ER II}) \rightarrow (\overset{\text{x}}{\text{x}}\text{x} \ \overset{\text{x}}{\text{x}})_m, (\text{flattening})$

If this alternative analysis is accepted, then prosodic restructuring rules, i.e. Stress Retraction (58) and its concomitant Stress Subordination Convention that figure prominently in a nonlinear analysis, along with the Gaps-filling Convention (59), can be dispensed with, resulting in the simplification of the grammar. Of the two analyses, the latter is simpler, hence more highly valued, in terms of grammatical description.

2.3.2. Destressing Rules

There are two destressing rules (DS), both applying postcyclically on the second metrical level at the end of derivation--one (74) destressing a clashing syllable and the other (79) destressing any final heavy ($-VCC$ or $-V'(C)$) syllable

of a phonological word (m) of more than one syllable. It is to be noted parenthetically that, in the case of (75a), it is subject to either (74) or (79).

2.3.2.1. Destressing, due to a clash (DS I)

$$(74) \overset{x}{x} - x / \overset{x}{x} \_ Y)_m$$

where Y may be null

(75) a. finally: cýning → cýning (7b)

$$\overset{x}{x}-\overset{x}{x} \text{cýning(g)} \text{ (DB, em, QS, ER II)} \rightarrow \overset{x}{x} \text{xx} \text{ (DS I)}$$

b. medially: cýninges → cýninges (8a)

$$\overset{x}{x}-\overset{x}{x} \text{cýninge(s)} \text{ (DB, em, QS, ER II)} \rightarrow \overset{x}{x} \text{xx x} \text{ (DS I)}$$

Hence, the following stress patterns (76) are not attested in OE verse (see Cable p.70).

$$*(76) (\overset{x}{t\ddot{o}}) \text{cýninge}^{\overset{x}{}}$$

$$\text{cýninge}^{\overset{x}{}} (\overset{x}{m\ddot{i}n\ddot{u}m})$$

However, DS I (74) is blocked when a phonological word of the type (75b) is preceded by another stressed bimoric phonological word within a larger phonological unit (m')(see Campbell §71)--a compound word (77a) or a phrase (77b), making the resulting forms eligible for D-type verses (/ (x) / / \ x) (linguistically: / (x) ^ \ x)(see §2.3.6)(cf. §2.3.3 below).⁸

(77) a. compound words (10a)

- i. þēod-cýninges 'of the monarch', sē-cýninga 'of the sea-kings' (Beowulf 2382), eorð-cýninges 'of the earth-king' (ibid. 1155), wúldor-cýninges 'of the King of Glory' (Genesis 111), worold-cýninga 'of the world-kings' (Beowulf 1684)
- ii. cniht-wésende, sáwl-béréndra 'of human beings' (Beowulf 1004), úmbor-wésende 'being (- as) a child' (ibid. 46)

b. noun phrases (10b)

féorh cýninges, fýll cýninges

Hence, DS I (74) will be blocked from application to an m' word, i.e. a phonological compound or phrase, as shown analyzed in (78).

(78)	(cynin(g)) _m	(cyninge(s)) _m	((eorð)(cyninge(s))) _m
cycle 1	$\begin{smallmatrix} \bar{x} & - & \bar{x} \\ \bar{x} & - & \bar{x} \end{smallmatrix}$ _m	$\begin{smallmatrix} \bar{x} & - & \bar{x} & x \\ \bar{x} & - & \bar{x} & x \end{smallmatrix}$ _m	$\begin{smallmatrix} \bar{x} & - & \bar{x} & - & \bar{x} & x \\ \bar{x} & - & \bar{x} & - & \bar{x} & x \end{smallmatrix}$ _m
2	—	—	$\begin{smallmatrix} \bar{x} & - & \bar{x} & - & \bar{x} & x \\ \bar{x} & - & \bar{x} & - & \bar{x} & x \end{smallmatrix}$ _m
DS I(74)	$\begin{smallmatrix} \bar{x} \\ \bar{x} \end{smallmatrix}$ xx _m	$\begin{smallmatrix} \bar{x} \\ \bar{x} \end{smallmatrix}$ xx x _m	blocked
output	¹ cýning	¹ cýninges	¹ eorð ² ³ cýninges

Note that DS I (74), being a postcyclical rule, can't apply among WFR's but only on fully-formed words at the end of derivation.

2.3.2.2. Destressing final heavy syllable (Final Destressing)

The final -VC syllable of a phonological word of more than one syllable in Old English is stressless since its final C is extrametrical, except where it counts on metrical demands for 'proper' scansion (see (41)). On the other hand, final heavy syllables of a long vowel (-VV(C)) or a short vowel followed by more than one consonant (-VCC) are capable of stress by QS (see Sievers §78); however, such final heavy syllables are normally destressed in verse (80) by Final Destressing (79),⁹ since they are not utilized in meter for any of the five types except where they count on metrical demands for proper scansion (11), which is repeated here in (81) (see Huguenin §§31, 36). Thus by (79), the final heavy syllable (not a sequence of two light syllables) of a phonological word is destressed.

(79) Final Destressing (DS II)

$$\begin{smallmatrix} \bar{x} \\ \bar{x} \end{smallmatrix} x - xx / \dots \frac{\quad}{\underset{\sigma}{\quad}} \substack{) \\ m}$$

$\begin{smallmatrix} \text{x} \\ \text{x} \text{x} \end{smallmatrix}$ $\begin{smallmatrix} \text{x} \\ \text{x} \text{x} \end{smallmatrix}$
 Bēowul(f) (DB, em, QS, ER II) (Bēowulf) → $\begin{smallmatrix} \text{x} \\ \text{x} \text{x} \end{smallmatrix}$ xx (DS II) (Bēowulf)

(80)(see (7))

Bēowulf (Beowulf 405), hlāford, æðeling (Genesis 2884), (ge)rædest
 (Maldon 36), þēowdōm 'slavery' (Elene 201), fēasceaft 'destitute'
 (Beowulf 2285)

(81) a. (see Campbell §90 fn.1, §549 fn.1)

Hruntǣn nāmā

æðeling mǣnig

b. Bēowulf gēpāh

Hēngest ðā gýt (Beowulf 1127)

c. Scýppend wērā (Andreas 787)

(81a,c) are all A-type verses, and the last heavy syllable of the first word of each verse bears secondary stress, overriding DS II (79), since a light syllable (i.e. the root initial syllable of the following word) can bear primary stress only if it is immediately preceded by a strong stress--in this instance, secondary stress (see (3)). (81b) are E-type verses, for which the last heavy syllable of the first word of each verse has to bear a strong stress--in this instance, secondary stress--since it is followed by an unstressed syllable (Cable, p.61).

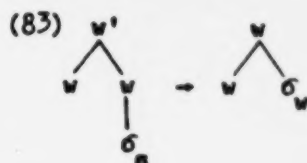
Final Destressing (79), however, does not apply to (82), as expected, since their second elements are monosyllabic phonological words.

(82) a. compound words: ((hēah)_m (mōd)_m), 'high spirit' (Phoenix 112)

b. stress-prefixed words: ((ed)_m (geong)_m), 'becoming young again'

(ibid. 435)

Now in the case of alternating forms, one a full compound word (84a)(=6b) and the other its 'reduced' form (84b)(=7a), the latter can be derived from the former (see Booij and Rubach 1987) by the following demoting rule (83).



- (84) a. [[hlāf]_w [weard]_w]_w, 'bread-keeper, lord'
 b. [hlāford]_w

2.3.3. Stress Attraction

PG can't apply on the post-tonic light medial syllable of such words as (8b)(= 24f) on account of the resulting stress clash with the preceding stressed syllable. However, such a post-tonic light syllable is capable of 'secondary' stress by the postcyclical Stress Attraction (85), when a phonological word (m_1) containing such a medial syllable is preceded by another phonological word (m_j) with a stressed bimoric morpheme (a stressed prefix or a word) within a phonological compound (m'), i.e. a stress-prefixed word (86a) or a compound word (86b) (see Campbell 1989 and fn.3), making the resulting stress patterns eligible for D_1 -type verses, as shown analyzed in (87).

(85) Stress Attraction (SA)

$$x \rightarrow \overset{\overset{x}{x}}{x} / ((\overset{\overset{x}{x}}{x})_{m_j} (\overset{\overset{x}{x}}{x} - x)_{m_1} m')$$

- (86) a. ánd-swâròde (metrically: ' / ' \ x) '(he) answered' (Beowulf 258, 340)
 míð-wunòde '(he) lived together' (Andreas 101)(65)
 b. éald-wérige 'accursed from old times' (Exodus 50)

$$(87) ((\overset{\overset{x}{x}}{xx})_{m_j} (\overset{\overset{x}{x}}{xx} \overset{\overset{x}{x}}{xx})_{m_1} m', (DB, ER I, ER II (2x)) \rightarrow (\overset{\overset{x}{x}}{xx} - \overset{\overset{x}{x}}{xx} - \overset{\overset{x}{x}}{xx} x)_{m'}, (SA)(\text{see (56a)})$$

The phonetic rationale for SA (85) is that only a preceding stressed bimoric constituent can attract a 'compensatory' secondary stress onto the following (non-adjacent) post-tonic light syllable.

2.3.4. Stress Shift

Multisyllabic words with hiatus are subject to synizesis (i.e. syllable reduction); therefore, when 4-syllable words (88bii), for example, are alternatively scanned as 3-syllable words by synizesis, one of the successive vowels in hiatus becomes [-syll], like the penultimate i in (88biii), with one of the vowels subsequently shortened if long as in (88ai)(Pogatscher {30}, with stress shift (88a) or without stress shift (88b)(Campbell {554-557}).

(88) a. i. ($\acute{x} \acute{x} \acute{x}$) $\rightarrow$ ($\acute{x} \acute{x}$)

Bérsābēā (17bi), Ámmōrrēā, Jūliānā (17bii) $\rightarrow$

Bérsābē, Ámmōrrē, Jūliānā

ii. ($\acute{x} \acute{x} \acute{x}$) $\rightarrow$ ($\acute{x} \acute{x}$)

Mālālēhēl (17bi), Gālīlēām $\rightarrow$ Mālālēhēl, Gālīlēām

iii. ($\acute{x} \acute{x} \acute{x}$) $\rightarrow$ ($\acute{x} \acute{x}$)

Bārthōlōmēūs (17c) $\rightarrow$ Bārthōlōmēūs

b. i. ($\acute{x} \acute{x}$) $\rightarrow$ ($\acute{x}$)

Cāinēs (Genesis 124)(17a), Iōhannīs $\rightarrow$

Cāinēs (ibid. 1066), Iōhannīs

ii. ($\acute{x} \acute{x} \acute{x}$) $\rightarrow$ ($\acute{x} \acute{x}$)

Grēgōrīūs (17bii)(= 29a), Ássyriā (Judith 232) $\rightarrow$

Grēgōrīūs, Ássyriā (ibid. 265)

iii. ($\acute{x} \acute{x} \acute{x}$) $\rightarrow$ ($\acute{x} \acute{x}$)

Mācēdōniā (13c), Mārmēdōniā $\rightarrow$

Mācēdōniā, Mārmēdōniā (Andreas 42, 180)(Campbell {556})

iv. ($\acute{x} x x \hat{=} \grave{x}$) $\rightarrow$ ($\acute{x} x x \grave{x}$)

Més^xöp^xtâ^xmî^xē (13d) $\rightarrow$ Més^xöp^xtâ^xmî^xē

It is apparent from the data (88) that the concomitant (postcyclical) Stress Shift applies only in an underlying phonological word with a second-level beat on the penultimate syllable preceded by a post-tonic unstressed syllable (88a); hence, it does not apply to (88b), as illustrated in (89).

(89) Grēgōriu(s) $\rightarrow$ $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x (29a)(Grēgōriūs) $\rightarrow$ $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x (synizesis)
(Grēgōriūs) $\rightarrow$ $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x (flattening)

Therefore, Stress Shift, which applies after synezisis, can be formulated as (90), as illustrated in (91).

(90) Stress Shift (SS)

$\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x $\rightarrow$ $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x

where x_1 may be either heavy or light

(91) $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ malalēhe(1) (DB, em) $\rightarrow$ x x $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x (QS) $\rightarrow$ $\frac{\acute{x}}{\acute{x}}$ x $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x (ER I) $\rightarrow$
 $\frac{\acute{x}}{\acute{x}}$ x $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x (ER II)(Málālēhēl) $\rightarrow$ $\frac{\acute{x}}{\acute{x}}$ x $\frac{\acute{x}}{\acute{x}}$ (synizesis) $\rightarrow$ $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x (SS)(Málāhēl)
 $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ Bersabēa (DB) $\rightarrow$ $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x (QS, ER II)(Bérsabēā) $\rightarrow$ $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x $\frac{\acute{x}}{\acute{x}}$ (synizesis) $\rightarrow$
 $\frac{\acute{x}}{\acute{x}}\frac{\acute{x}}{\acute{x}}$ x (SS)(Bérsābēā)

From (91) one can see that Stress Shift (90) precedes DS II (79) since, otherwise, DS II would wrongfully bleed Stress Shift. Moreover, even though a stress clash resulting from application of a basic beat addition rule (QS) is eliminated by DS I (74), the clash resulting from application of a postcyclical stress adjustment rule, such as SA (85) or SS (90), is tolerated. Furthermore, SS differs from Rhythm Rule ({2.3.5}), in that the former is conditioned by synezesis with the leftward movement of a beat to the nearest landing site, overriding a stress clash (91), while the latter is conditioned by a stress

clash with the rightward movement of a beat, eliminating a stress clash.

2.3.5. Rhythm Rule

Rhythm Rule (RR) is a beat movement rule that operates on the third level of the grid and above. RR and ER II operate complementarily; that is to say, if ER II is initial in a language, then its RR would operate rightwardly; on the other hand, if ER II is final in a language, then its RR would operate leftwardly. Thus in Modern English whose ER II is final, its RR (92) operates leftwardly, as illustrated in (93-94) (see Kiparsky 1979, p. 428; Selkirk p.168).

(92) Rhythm Rule (Modern English)

$$\begin{array}{ccc} x_1 x & x_1 & x \\ x x x & \rightarrow & x x x \end{array}$$

Condition: x_1 is a weak beat (i.e. not the designated terminal element) on the third level of the grid and up.

(93) a. [[expect]_vation]_N → b. [expectation]_N

$$\begin{array}{ccc} x & x & \\ x & x & \\ \hline x - x & = & x \\ x - x & = & x \end{array} (x) \rightarrow \begin{array}{ccc} x & x & x \\ x & x & x \\ \hline x - x & = & x \end{array} x$$

(94) a. [[Tennessee]_N[air]_N]_N → b. [Tennessee air]_N

$$\begin{array}{ccc} x & x & x \\ x & x & x \\ \hline x & x & x \\ x & x & x \end{array} = \begin{array}{ccc} x & x & x \\ x & x & x \\ \hline x & x & x \end{array} \rightarrow \begin{array}{ccc} x & x & x \\ x & x & x \\ \hline x & x & x \end{array} x$$

In the case of (94a) where two clash levels are involved, stress clashes are to be resolved from top down, not bottom up, since, if the lower second level clash had first been resolved, an unwarranted hole would be created in its column, together with a stress clash, as shown in (95), resulting in an ill-formed output.

(95)

$$(94a) \rightarrow \begin{array}{ccc} x & x & x \\ x & x & x \\ \hline x & x & x \end{array}$$

In Old English, on the other hand, RR would move a clashing beat rightwardly to the nearest landing site, just as in German (96) (see Kiparsky 1966;

Hayes 1983, p.73).

(96) ¹Feld ²Marschall ³ → ¹Feld ³Marschall ² 'Field Marshall'

¹sichtbar ²'visible' → ¹unsichtbar ³²'invisible'

²halb¹tot 'half-dead' → ²der ³halb¹tote Mann 'the half-dead man'

¹gross-²vater 'grandfather' → ¹ur-²gross-³vater 'great grandfather' →

¹ur-³gross-²vater
S W S

S S W

The Old English RR hence can be formulated as (97) as the mirror image of (92) with the same condition, with the relevant data given in (98) and their analysis in (99 ff.).

(97) Rhythm Rule (Old English)

x-x_i x x_i
x x x → x x x

(98) a. unrihtwis(e) 'unrighteous', unārlīc(e) 'dishonest', rihtwīslīc(e) 'righteous', unrihtwīsness(e) 'injustice', unsōðfestness(e) 'injustice' (the final -e in parentheses is an inflectional ending)

Ðēah hine nū se yfela / unrihtwīsa (The Metres of Boethius 15/1)

b. rondhæbbende 'shield-bearer' (Beowulf 861), sǣwlberendra 'of human beings' (ibid. 1004)(77a11), tēargēotende 'tearful'

c. hagostealdmon 'one living in the lord's house; an unmarried man; a bachelor, a warrior'

i. to hwas hagstealdmen 'where warriors' (Exodus 192)

ii. geong hagostealdmon 'young bachelor' (Riddles 14/29)

Now the words in the cited verses (98a) and (98b) are normally scanned

as D_1 -type verses ($' / \backslash x$) (= 1 / 2 3 4) with tertiary stress on the heavy medial suffix syllables. However, if RR (97) is to apply (optionally) on them, as it does on their modern German equivalents (96), they would be scanned as A-type verses ($' \backslash / x$) (= 1 3 / 2 4), as shown analyzed in (99) and (100) respectively.

(99) *un-rihtwīse* → ((x)_m (xx xx x)_m), (DB) → (($\bar{x}$)_m ($\bar{x}$ xx $\bar{x}$ x x)_m), (QS, ER I)

→ (($\bar{x}$)_m ($\bar{x}$ xx $\bar{x}$ x x)_m), (ER II) → ($\bar{x}$ $\bar{x}$ - $\bar{x}$ $\bar{x}$ x x)_m, (ER II) ($\overset{1}{\text{un-rihtwīse}}$) ($\overset{2}{D_1}$)

→ ($\bar{x}$ $\bar{x}$ $\bar{x}$ $\bar{x}$ x x)_m, (RR) ($\overset{1}{\text{un-rihtwīse}}$) ($\overset{2}{A}$)

(100) *rondhæbbende* → ((xx)_m (xx xx x)_m), (DB) → (($\bar{x}$ x)_m ($\bar{x}$ x $\bar{x}$ x x)_m), (QS)

→ (($\bar{x}$ x)_m ($\bar{x}$ x $\bar{x}$ x x)_m), (ER II) → ($\bar{x}$ $\bar{x}$ - $\bar{x}$ $\bar{x}$ x x)_m, (ER II) ($\overset{1}{\text{rondhæbbende}}$) ($\overset{2}{D_1}$)

→ ($\bar{x}$ $\bar{x}$ $\bar{x}$ $\bar{x}$ x x)_m, (RR) ($\overset{1}{\text{rondhæbbende}}$) ($\overset{2}{A}$)

Be that as it may, we have no metrical evidence to prove either the correctness or incorrectness of the alternative scansion of the words via RR (97), since the verses in question can be scanned either way within the framework of the Sievers' system (4), which seems to point to the optionality of RR in Old English.¹¹

The word *unrihtwīse* can be bracketed morphologically either as (101a) or (101b) but phonologically only as (102), and it is on (102) that stress rules apply (see (56)).

(101) a. [[un-riht]_A wīs]_A e]_A

b. [[un][riht-wīs]_A]_A e]_A

(102) ((un)_m (rihtwīse)_m),

Next, the second verse in (98c) is scanned as a D_2 -type verse (103a) (Huguenin p.20), as shown analyzed in (104a); accordingly, the word in

2.3.6. Stress Promotion and Stress Demotion

There are also some purely verse-specific stress adjustment rules: stress promotion and stress demotion rules, the former promoting a beat and the latter demoting one, both operating optionally in verse for a metrical line to be scanned so as to be fitted into one of the verse types (4).

Now a verse (i.e. a half line) contains only two metrical primary (called the ictus) stresses; therefore, in case a verse contains either less than two or more than two linguistic primary stresses, a secondary stress is then promoted to the ictus in the former while an extra primary stress is demoted to a non-primary metrical stress in the latter, since verse operates only on 3 degrees of stress, compared to the prose that operates on 4 degrees of stress. Thus, 4 degrees of stress ($\prime \wedge \backslash x$) in prose (86) are reduced to 3 degrees of stress ($\prime \backslash x$) in verse, where the grave accent mark ($\backslash$) represents secondary stress. Moreover in Old English there is no Nuclear Stress Rule (NSR); instead, ^{employed} Compound Stress Rule is ~~used~~ for stressing both phonological compound words and phrases (see Maling 1971).¹²

2.3.6.1. Stress Promotion

Stress Promotion (106) optionally promotes to primary metrical stress a secondary linguistic stress on the medial syllable immediately preceded by a bimoric primary stressed unit--a heavy syllable or a sequence of two light syllables--and followed by another syllable within a verse (i.e. a half line) for it to be scanned as a C- or D-type verse that requires adjacent juxtaposed primary stresses, as illustrated below in (107-109).

(106) Stress Promotion (SP)

$$\begin{array}{c} (x) \quad (x) \quad (x) \\ \underline{x} \quad \underline{x} \quad \underline{x} \\ \underline{x} \rightarrow \underline{x} / \underline{x} x \text{ --- } \dots \end{array} \quad v$$

where v represents a verse

(107) phonological simple words (also see Huguenin {16})

a. C-type verses

$\overset{x}{s} \overset{x}{w} \overset{x}{a} \overset{x}{s} \overset{x}{e} \overset{x}{g} \overset{x}{e} \overset{x}{s} \overset{x}{e} \overset{x}{l} \overset{x}{i} \overset{x}{g} \overset{x}{a}$ (linguistic stress) $\rightarrow x x x / \downarrow x$ (metrical stress) (Phoenix 350)

$\overset{x}{o} \overset{x}{\theta} \overset{x}{p} \overset{x}{e} \overset{x}{t} \overset{x}{h} \overset{x}{e} \overset{x}{p} \overset{x}{u} \overset{x}{s} \overset{x}{e} \overset{x}{n} \overset{x}{d} \overset{x}{e}$ $\rightarrow x x x / / x$ (ibid. 151)

$\overset{x}{t} \overset{x}{o} \overset{x}{g} \overset{x}{e} \overset{x}{c} \overset{x}{e} \overset{x}{o} \overset{x}{s} \overset{x}{e} \overset{x}{n} \overset{x}{n} \overset{x}{e}$ $\rightarrow x x x / / x$ (Beowulf 1851)

$\overset{x}{o} \overset{x}{n} \overset{x}{d} \overset{x}{l} \overset{x}{a} \overset{x}{c} \overset{x}{o} \overset{x}{b} \overset{x}{e} \overset{x}{s}$ $\rightarrow x / \downarrow x$ (Psalm 83.7) (Campbell f549 fn.1)

$\overset{x}{g} \overset{x}{e} \overset{x}{f} \overset{x}{e} \overset{x}{t} \overset{x}{e} \overset{x}{r} \overset{x}{o} \overset{x}{d} \overset{x}{e}$ $\rightarrow x / \downarrow x$ (Genesis 2902)

$\overset{x}{n} \overset{x}{u} \overset{x}{m} \overset{x}{e} \overset{x}{g} \overset{x}{c} \overset{x}{u} \overset{x}{n} \overset{x}{n} \overset{x}{i} \overset{x}{a} \overset{x}{n}$ $\rightarrow x x / \downarrow x$ (Maldon 215)

b. $\overset{x}{(g)} \overset{x}{s} \overset{x}{e} \overset{x}{l} \overset{x}{i} \overset{x}{g} \overset{x}{a}$ 'the happy' (DB, QS, PG, ER II) $\rightarrow \overset{x}{x} \overset{x}{x} \overset{x}{x} x$ (SP)

$\overset{x}{p} \overset{x}{u} \overset{x}{s} \overset{x}{e} \overset{x}{n} \overset{x}{d} \overset{x}{e}$ 'thousand' (DB, QS, ER II) $\rightarrow \overset{x}{x} \overset{x}{x} \overset{x}{x} x$ (SP)

$\overset{x}{(g)} \overset{x}{f} \overset{x}{e} \overset{x}{t} \overset{x}{e} \overset{x}{r} \overset{x}{o} \overset{x}{d} \overset{x}{e}$ '(he) fettered' (DB, ER I, PG, ER II) $\rightarrow \overset{x}{x} \overset{x}{x} \overset{x}{x} x$ (SP)

(108) phonological compound words, including stress-prefixed words (see Huguenin {17})

a. i. D_1 -type verses

$\overset{x}{a} \overset{x}{n} \overset{x}{d} \overset{x}{s} \overset{x}{w} \overset{x}{a} \overset{x}{r} \overset{x}{o} \overset{x}{d} \overset{x}{e}$ $\rightarrow / / \downarrow x$ (Beowulf 258)

$\overset{x}{b} \overset{x}{r} \overset{x}{i} \overset{x}{m} \overset{x}{l} \overset{x}{i} \overset{x}{p} \overset{x}{e} \overset{x}{n} \overset{x}{d} \overset{x}{r} \overset{x}{a}$ $\rightarrow / / \backslash x$ (Maldon 27)

ii. C-type verses

$\overset{x}{o} \overset{x}{n} \overset{x}{h} \overset{x}{o} \overset{x}{l} \overset{x}{t} \overset{x}{w} \overset{x}{u} \overset{x}{d} \overset{x}{u}$ 'in the forest' $\rightarrow x / \downarrow x$ (Phoenix 171)

$\overset{x}{g} \overset{x}{e} \overset{x}{o} \overset{x}{n} \overset{x}{d} \overset{x}{l} \overset{x}{a} \overset{x}{g} \overset{x}{u} \overset{x}{l} \overset{x}{a} \overset{x}{d} \overset{x}{e}$ 'beyond the sea' $\rightarrow x \downarrow x / / x$ (Wanderer 3)

$\overset{x}{i} \overset{x}{n} \overset{x}{g} \overset{x}{e} \overset{x}{a} \overset{x}{r} \overset{x}{d} \overset{x}{a} \overset{x}{g} \overset{x}{u} \overset{x}{m}$ 'in the days of yore' $\rightarrow x / \downarrow x$ (ibid. 44)

$\overset{x}{o} \overset{x}{n} \overset{x}{b} \overset{x}{y} \overset{x}{s} \overset{x}{i} \overset{x}{g} \overset{x}{l} \overset{x}{a} \overset{x}{n} \overset{x}{d} \overset{x}{e}$ 'on this island' $\rightarrow x x / / x$ (Brunnanburh 66)

b. i. $\overset{x}{(b} \overset{x}{r} \overset{x}{i} \overset{x}{m}) \overset{x}{(l} \overset{x}{i} \overset{x}{p} \overset{x}{e} \overset{x}{n} \overset{x}{d} \overset{x}{r} \overset{x}{a})}_m$ 'seafarers' (DB, QS, ER II) $\rightarrow$

$\overset{x}{(x} \overset{x}{x} \overset{x}{x} \overset{x}{x} \overset{x}{x})}_m$, (ER II) $\rightarrow \overset{x}{(x} \overset{x}{x} \overset{x}{x} \overset{x}{x} \overset{x}{x})}_m$, (SP) $\rightarrow \overset{x}{(x} \overset{x}{x} \overset{x}{x} \overset{x}{x} \overset{x}{x})}_m$

(flattening)

$$\begin{aligned}
 \text{ii. } & ((\overset{\text{X}}{\underset{\text{X}}{\text{h}}}\overset{\text{X}}{\text{c}}\overset{\text{X}}{\text{t}}) (\overset{\text{X}}{\underset{\text{X}}{\text{w}}}\overset{\text{X}}{\text{u}}\overset{\text{X}}{\text{d}}\overset{\text{X}}{\text{u}}))_{\text{m}} (\text{DB, QS, ER II}) \rightarrow (\overset{\text{X}}{\text{x}}\overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}})_{\text{m}}, (\text{ER II}) \rightarrow \\
 & (\overset{\text{X}}{\text{x}}\overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}})_{\text{m}}, (\text{SP}) \rightarrow (\overset{\text{X}}{\text{x}}\overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}})_{\text{m}}, (\text{flattening})
 \end{aligned}$$

Note that of the two postcyclical rules SP and RR, SP precedes RR, as shown in (108bi), where SP bleeds optional RR.

(109) phrases

a. wis [^]ealdor^xman 'a wise prince' → // x \ (Maldon 219), a D₂-type verse

wéard Scilding^xa 'the guard of the Scildings' → // \ \ x

(Beowulf 229), a D₁-type verse

$$\text{b. } ((\overset{\text{X}}{\underset{\text{X}}{\text{w}}}\overset{\text{X}}{\text{i}}\overset{\text{X}}{\text{s}}) (\overset{\text{X}}{\underset{\text{X}}{\text{e}}}\overset{\text{X}}{\text{a}}\overset{\text{X}}{\text{l}}\overset{\text{X}}{\text{d}}\overset{\text{X}}{\text{o}}(\text{r})) (\overset{\text{X}}{\underset{\text{X}}{\text{m}}}\overset{\text{X}}{\text{a}}\overset{\text{X}}{\text{n}}))_{\text{m}} (\text{DB, em, QS, ER I, ER II}) \rightarrow$$

$$\begin{aligned}
 & ((\overset{\text{X}}{\text{x}}\overset{\text{X}}{\text{x}}) (\overset{\text{X}}{\text{x}}\overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}}))_{\text{m}}, (\text{ER II}) \rightarrow (\overset{\text{X}}{\text{x}}\overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}})_{\text{m}}, (\text{ER II}) \rightarrow (\overset{\text{X}}{\text{x}}\overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}})_{\text{m}}, \\
 & (\text{SP}) \rightarrow (\overset{\text{X}}{\text{x}}\overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}} \overset{\text{X}}{\text{x}})_{\text{m}}, (\text{flattening})
 \end{aligned}$$

Now of the two metrically juxtaposed primary stresses in a phonological compound word or a phrase, the first is necessarily stronger since it alliterates, as shown in (108-109), where the alliterating segments are *italicized*, and alliterating primary stresses are stronger than non-alliterating primary stresses.

2.3.6.2. Stress Demotion

Stress Demotion (110) optionally defoots on metrical demands a medial syllable with secondary stress ((12), (16)) after a bimoric primary stressed syllable within a phonological word (m) in a verse (v), as illustrated in (111).

(110) Medial Syllable Demotion (MSD)

$$\overset{\text{X}}{\text{x}} \rightarrow \text{x} / \overset{\text{X}}{\text{x}}\overset{\text{X}}{\text{x}} \text{ — ... })_{\text{m}} \text{ v}$$

- (111) a. $\overset{\text{XX}}{\text{w}^{\text{X}}\text{or}^{\text{X}}\text{ia}\delta}$ $\text{p}^{\text{X}}\text{a}$ $\text{w}^{\text{X}}\text{insal}\delta$ (Wanderer 78), a D_1 -type verse
- b. $(\overset{\text{XX}}{\text{w}^{\text{X}}\text{or}^{\text{X}}\text{ia}(\delta))}_m$ (DB, em) $\rightarrow (\overset{\text{X}}{\text{X}}\text{x} \overset{\text{X}}{\text{X}} \text{x})_m$ (QS, PG, ER II) $(\overset{\text{X}}{\text{w}^{\text{X}}\text{or}^{\text{X}}\text{ia}\delta)$ (24c) $\rightarrow$
 $(\overset{\text{X}}{\text{X}}\text{x} \text{x} \text{x})_m$ (MSD) $(\overset{\text{X}}{\text{w}^{\text{X}}\text{or}^{\text{X}}\text{ia}\delta)$

However, unlike the words in (11) whose secondary stresses on final syllables have to be demoted in the verses in question for them to be scanned correctly, some words with secondary stress on a medial syllable, on the other hand, can have their secondary stress either retained as in (112-113), where the verses are scanned as E-type verses with anacrusis $((\text{x} \text{x}) \text{ } \text{ } \text{x} / \text{ })$ since the suffixed forms of the word Bēowulf (Bēowulfes, Bēowulfe, etc.) in the epic poem are normally scanned as $(\text{ } \text{ } \text{x})$ with secondary stress (see also Huguenin p.12; Sievers §83), or demoted as in (114) via MSD (110), where the verses are scanned as B-type verses since secondary stresses ('light half-stresses') in Bēowulfes (24a), Iācōbes, Ādames (15a) are said to be optionally destressed ('neglectable') in verse (Campbell §549).¹³

- (112) a. $(\text{x} \text{x}) \text{ } \text{ } \overset{\text{X}}{\text{w}^{\text{X}}\text{es}}$ $\text{h}^{\text{X}}\text{im}$ $\overset{\text{X}}{\text{B}^{\text{X}}\text{eowulfes}}$ $\text{s}^{\text{X}}\text{i}\delta$
- b. $(\text{x} \text{x}) \text{ } \text{ } \overset{\text{X}}{\text{n}^{\text{X}}\text{e}}$ $\text{p}^{\text{X}}\text{æt}$ $\overset{\text{X}}{\text{I}^{\text{X}}\text{ācōbes}}$ $\text{g}^{\text{X}}\text{ód}$
- (113) a. $(\text{x} \text{x}) \text{ } \text{ } \overset{\text{X}}{\text{p}^{\text{X}}\text{æt}}$ ic $\overset{\text{X}}{\text{ēnigra}}$ $\text{m}^{\text{X}}\text{ē}$ (Beowulf 932, 949)
- b. $(\text{x} \text{x}) \text{ } \text{ } \overset{\text{X}}{\text{p}^{\text{X}}\text{eah}}$ δe $\overset{\text{X}}{\text{ēnlicu}}$ $\text{s}^{\text{X}}\text{ý}$ (ibid. 1941)
- (114) a. $\overset{\text{X}}{\text{w}^{\text{X}}\text{es}}$ $\overset{\text{X}}{\text{h}^{\text{X}}\text{im}}$ $\overset{\text{X}}{\text{B}^{\text{X}}\text{eowulfes}}$ $\text{s}^{\text{X}}\text{i}\delta$ (Beowulf 501)(Campbell §90 fn.1)
- (cf. $\text{s}^{\text{X}}\text{i}\delta$ $\overset{\text{X}}{\text{B}^{\text{X}}\text{eowulfes}}$ (ibid. 1971))
- b. $\overset{\text{X}}{\text{n}^{\text{X}}\text{e}}$ $\text{p}^{\text{X}}\text{æt}$ $\overset{\text{X}}{\text{I}^{\text{X}}\text{ācōbes}}$ $\text{g}^{\text{X}}\text{ód}$ (Psalm 93.7)(Campbell §549 fn.1)

footnotes

* This is a greatly expanded version of the paper presented at the annual ISA meeting, held in San Francisco, December, 1987.

¹ Some final syllables are capable of secondary stress but are usually unstressed (Sievers §78).

² A medial syllable after a stressed light syllable in a phonological word, however, acquires "a half stress" when it occurs in the "second elements of compounds with accented first elements" (Campbell §91).

³ And on final consonant extrametricality (em), see §2.2.1 below.

⁴ For Modern English, BA may not be a basic grid assignment rule but a 'grid euphony' rule as its application is optional on the word as well as on the phrase level (see Selkirk 1984, pp.101,103,180); however, in Old English it is one of the obligatory, core grid construction rules.

⁵ The resulting stress clashes on the third metrical level for native words in (34) as well as for loan-words in (29), however, stay put since Rhythm Rule is optional in Old English, just as in Modern English (31), as elaborated in detail in §2.3.5 below.

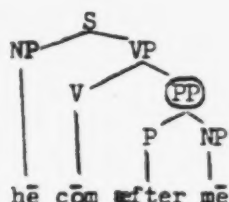
⁶ The difference between deverbal nouns ($V \rightarrow N$) (57e) and denominative verbs ($N \rightarrow V$) (57a) in Old English is somewhat analogous to the difference between (a) and (b) in the following Modern English examples where the former is generated at level 1 (stress shifting) and the latter at level 2 (stress neutral) (see Kiparsky 1982).

a. (level 1): [allý]_V - [[állý]_V]_N

b. (level 2): [páttérn]_N - [[páttérn]_N]_V

⁷However, according to Allen (1980), the so-called separable prefix is not a prepositional adverb that forms a verbal unit with a following verb as shown analyzed in (71) but a preposition that forms a prepositional phrase (PP) with a following NP, as shown analyzed in (72), which optionally becomes (69ai) by Preposition Shift and then (69bii) by additional Preposition Split when NP is [+Pro].

(72)



Hence, (71) is said to be 'derived' from (72) by Preposition Shift. However, such a movement rule is not called for in the present analysis (71).

⁸Thus in the present analysis wuldor-cýninges and (its equivalent verse) worold cýninga (77a) are both uniformly scanned as D_1 -type verses, as shown below in (a); however, Huguenin (§24) would arbitrarily scan the first verse as an A-type verse with a 'resolved' stress over the first two light syllables of cýninges but the second verse as a D_1 -type verse since, had it been scanned like the first verse, it would be unmetrical with only 3 (instead of a minimum of 4) stresses, as shown in (b):

(a) wúld^xor-cýning^xes (D_1)

wor^ˈold cýning^xa (D_1)

(b) wúld^xor-cýning^xes (A)

*wor^ˈold cýning^xa

⁹In Modern English, however, final -CVV(C) syllable is not subject to destressing (see Selkirk p.129).

¹⁰As their initial segments alliterate (in (69bi) and the first three verses in (69ai)), and the primary metrical stress (i.e. the ictus) on an alliterating syllable is stronger than the one on a non-alliterating syllable. (The last verse in (69ai) has the ictus on 'niht', and Osorius is a prose work.)

¹¹On the other hand, Huguenin (p.24) attributes the different scansions of such words to different morphological bracketings:

(a) un-rihtwīse (b) unriht-wīse

¹²On the other hand, the intonation patterns of the equivalent constructions on holt-wudu (108aii) and wīe ealdorman (109a) would be (x / ^ x) and (^ / \ x) respectively in Modern English by NSR.

¹³However, Bliss (pp.126, 84) scans (112a) solely as a '3B2b' type verse since "secondary stress is never found in Type B verses"(!).

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